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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 724,770	11 28 2000	Robert H. Dueck	34013-48PT	7641

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EXAMINER

KAO, CHIH CHENG G

ART UNIT PAPER NUMBER

2882

DATE MAILED: 12 19 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/724,770

Applicant(s)

DUECK ET AL.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) 1,7,8 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 28 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-7
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Figs. 5A-5D, #1

Fig. 6, #30

Fig. 8, #145, 150, 155

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Note that #1 of Figs. 5A-5D may be referring to #11 for the diffraction grating assembly (Page 14, lines 1-2).

Specification

2. The abstract of the disclosure is objected to because the abstract in an application filed under 35 U.S.C. 111 may not exceed 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claim 1 is objected to because of the following informalities. Claim 1 recites the limitation "the lens" in line 12. There is insufficient antecedent basis for this limitation in the

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claim. This objection may be obviated by inserting --assembly-- after "the lens". For purposes of examination, the claim will be treated as such. Appropriate correction is required.

4. Claim 1 is objected to because of the following informalities. Claim 1 recites the limitation "the change" in line 16. There is insufficient antecedent basis for this limitation in the claim. This objection may be obviated by deleting "the" and inserting --a--. For purposes of examination, the claim will be treated as such. Appropriate correction is required.

5. Claim 7 is objected to because of the following informalities. Claim 7 recites the limitation "the lens" in lines 3, 5, and 6. There is insufficient antecedent basis for this limitation in the claim. This objection may be obviated by inserting --assembly-- after all instances of "lens". For purposes of examination, the claim will be treated as such. Appropriate correction is required.

6. Claim 8 is objected to because of the following informalities. Claim 8 recites the limitation "the lens" in line 13. There is insufficient antecedent basis for this limitation in the claim. This objection may be obviated by inserting --assembly-- after "the lens". For purposes of examination, the claim will be treated as such. Appropriate correction is required.

7. Claim 8 is objected to because of the following informalities. Claim 8 recites the limitation "the change" in line 17. There is insufficient antecedent basis for this limitation in the

claim. This objection may be obviated by deleting "the" and inserting --a--. For purposes of examination, the claim will be treated as such. Appropriate correction is required.

8. Claim 14 is objected to because of the following informalities. Claim 14 recites the limitation "the lens" in lines 3, 5, and 6. There is insufficient antecedent basis for this limitation in the claim. This objection may be obviated by inserting --assembly-- after all instances of "lens". For purposes of examination, the claim will be treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 4-6, 8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keyworth et al. (US Patent 6134359) in view of Ogusu et al. (US Patent 5799118).

10. Regarding claims 1, 4, 6, 8, 11, and 13, Keyworth et al. discloses a WDM (Fig. 1) comprising a longitudinal structure (Fig. 1, #10) supporting optical components for transmitting and receiving optical signals (Fig. 1, #24, 26, and 28), a diffraction grating (Fig. 1, #12) to diffract the optical signals with a coefficient of thermal expansion of 0.5 PPM/degree Celsius to 1.5 PPM/degree Celsius (col. 3, line 20), a lens assembly (Fig. 1, #14) constructed of a material

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chosen to minimize variance in focal length (col. 2, lines 33-41) between the optical components and diffraction grating.

However, Keyworth et al. does not disclose the diffraction grating coefficient of thermal expansion equal to a negative of the change of index of refraction with temperature of air.

Ogusu et al. teaches the diffraction grating coefficient of thermal expansion in relationship to the change of index of refraction with temperature of air (col. 3, lines 9-15).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the diffraction grating in a relationship of air of Ogusu et al. by having a coefficient equal to the negative of the change of index with the device of Keyworth et al., since where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges or values only involves routine skill in the art. One would be motivated to have those values to reduce the temperature dependency of the wavelength transmission characteristic as implied from Ogusu et al. (US Patent 9-15).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have constructed the lens from a material with the suggested device of Keyworth et al. in view of Ogusu et al., since it would have been within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. One would be motivated to choose a material based on temperature to have a device that has improved temperature stability as implied from Ogusu et al. (col. 1, lines 5-12).

11. Regarding claims 5 and 12, Keyworth et al. in view of Ogusu et al. suggest a device as recited above.

However, Keyworth et al. does not disclose the lens having a change of index of refraction of 0 to -2.5 PPM/degree Celsius.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have a change of index of refraction of 0 to -2.5 PPM/degree Celsius with the suggested device of Keyworth et al. in view of Ogusu et al., since where the general conditions of a claim are disclose in the prior art, discovering the optimum or workable ranges or values only involves routine skill in the art. One would be motivated to have a change of 0, since one would want to keep a WDM stable in spite of changes in temperature as implied from Ogusu et al. (col. 2, lines 33-37).

12. Claims 2, 3, 9, and 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over Keyworth et al. in view of Ogusu et al. as applied to claim 1 and 7 above, and further in view of Jamieson (Thermal effects in optical systems).

Keyworth et al. in view of Ogusu et al. suggests a device as recited above.

However, Keyworth et al. does not disclose the lens and structure having a coefficient of thermal expansion about equal or within 3 PPM/degree Celsius.

Jamieson teaches the lens and structure having a coefficient of thermal expansion about equal (Page 157, col. 2, lines 6-11).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the about equal coefficient of thermal expansion of Jamieson with

the suggested device of Keyworth et al. in view of Ogusu et al., since one would be motivated to use this in designing systems to perform satisfactorily in a wide range of temperature environments as implied from Jamieson (Page 156, col. 1, Introduction, lines 1-10).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the coefficient of thermal expansion within 3 PPM/degree Celsius with the suggested device of Keyworth et al. in view of Ogusu et al. and Jamieson, since where the general conditions of a claim are disclose in the prior art, discovering the optimum or workable ranges or values only involves routine skill in the art. One would be motivated to have those values to have much improved temperature stability (col. 2, lines 33-60) as implied from Ogusu et al.

13. Claims 7 and 14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Keyworth et al. in view of Ogusu et al. as applied to claim 1 and 7 above, and further in view of Jamieson and Olivieri et al. (Analysis of defocusing thermal effects in optical systems).

For purposes of being concise, Keyworth et al. in view of Ogusu et al. and Jamieson suggests a device as recited above.

However, Keyworth et al. does not disclose changing the index of refraction of the lens to keep the lens in focus.

Olivieri et al. teaches changing the index of refraction of the lens to keep the lens in focus (Abstract).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have changing in index of refraction of the lens to keep the lens in focus

of Olivieri et al. with the suggested device of Keyworth et al. in view of Ogusu et al. and Jamieson, since one would be motivated to consider thermal defocusing as implied from Olivieri et al. (Abstract) in order to optimize a signal in the optical system.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 9-11, 14-18, 21, 24-28, 32-34, 37-41, and 44 of copending Application No. 09/724771. Although the conflicting claims are not identical, they are not patentably distinct from each other because the omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk
December 14, 2002

